

RECORDS OF THE QUEEN VICTORIA MUSEUM
LAUNCESTON

THE TICK FAUNA OF TASMANIA

by

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SUMMARY

Nineteen species of ticks are now known to occur in Tasmania. These are distributed among the various genera as follows: *Argas* (1), *Ixodes* (13), *Amblyomma* (2), and *Aponomma* (3). The presence of a species of the *Argas* (*Carios*) *vespertilionis* group, of a representative of the *I. auritulus* group, and of *I. antechini*, *I. trichosuri* and *I. australiensis*, is recorded for the first time. Host and geographical records, most of which are new, are given for all species.

Prior to the commencement some ten years ago of studies by the author on the systematics of Australian ticks, only seven species had been recorded from Tasmania. Neumann (1899) described *Ixodes tasmani* from the Tasmanian mainland and *Amblyomma postoculatum* and *Amb. limbatum* from King Is., Bass Strait, and recorded the presence of *I. ornithorhynchi* Lucas. Nicholls (1922) noted *Haemaphysalis bispinosa* Neumann on cattle at Hobart, Taylor (1946) referred to "*Aponomma trachysauri* Lucas" (= *Ap. hydro-sauri* Denny (Roberts 1964)), and Seddon to *Ixodes holocyclus* Neumann.

Roberts (1960) increased the number of species of *Ixodes* to nine, namely *edyptidis* Maskell, *ariae* White, *kohlsi* Arthur, *pterodromae* Arthur, *ornithorhynchi* Lucas, *tasmani* Neumann, *facialis* Warburton & Nuttall, *cornutus* Roberts, and *hirsti* Hassall. According to this author, *holocyclus* does not occur in Tasmania. The same author indicated that three species of *Aponomma* are present (Roberts 1964). *Ornithodoros capensis* Neumann, which is known to be associated with the little penguin, *Eudyptula minor*, in southern Australia, including Victoria, is probably also present on this host in Tasmania but as yet there are no records. *H. bispinosa* has not been seen since Nicholls' (1922) record; in fact, Roberts (1963) found the genus *Haemaphysalis* to be entirely unrepresented.

The present paper gives new host and geographical records for the species already recorded, with notes on species recorded for the first time. These records are based mainly on recent extensive collections made available to the author by the Division of Wildlife Research, C.S.I.R.O.

ARGASIDAE

Genus *Argas* Latreille

Argas (Carios) sp.

Hoogstraal and Kohls (1962) in their paper on larvae of the subgenus *Carios* from bats of the Australian mainland and New Guinea, consider these to belong to the *vespertilionis* group and to be possibly *pusillus* Kohls, or *australensis* Kohls & Hoogstraal, or a new species. Larvae from *Pipistrellus tasmaniensis*, G.P.O., Hobart, 27.vii.1962, were not included in this paper, but Kohls (personal communication) considered that they also belong to the *vespertilionis* group. This is the first record of a species of *Argas* in Tasmania.

IXODIDAE

Genus *Ixodes* Latreille

I. edyptidis Maskell

Roberts (1960) recorded this species from *Eudyptula minor*, Little Green Is., Furneaux Group, Bass Strait.

Material since received and placed under this name includes: *Larus novaehollandiae*, Wynyard, 9.ii.1959, R. H. Green (2 ♀). *Tyto novaehollandiae castanops*, Lemon Hill, Jericho, 21.ii.1960, R.H.G., (1 ♀). *Eudyptula minor* (burrow), Port Davey, 20.xi.1959, R.H.G. (1 ♀). *Sula bassana serrator*, Black Pyramid, Bass Strait, R.H.G., (15 ♂).

One specimen from *L. novaehollandiae* has a malformed basis capitulum and right palp. In both specimens the scutum is broader in relation to its length, W/L ratio 0.87 and 0.89 respectively, than in type material of *edyptidis*, W/L ratio 0.77 (Dumbleton, personal communication). As, however, Dumbleton intimated that he has encountered specimens from New Zealand considered by him to be this species with a W/L ratio similar to that of the Tasmanian material, which otherwise conforms closely to the description of *edyptidis*, the two specimens have been determined as this species.

The female from *T. n. castanops* can be given only a provisional determination of *edyptidis* as it differs in several aspects from other specimens determined as this species by Dumbleton (personal communication) and the author. The scutum is somewhat subcircular, about as wide as long, palpal articles 2 and 3 are without any obvious constriction and the anal grooves are parallel. The specimen could represent a new species, but more material is required before this can be decided.

The female from a burrow of *E. minor* and the nymphs from *S. b. serrator* appear typical of *edyptidis*.

I. auritulus Neumann

Material placed under this name comprised: *Strepera fuliginosa*: Saint Valentine's Peak, 13.vii.1962, D. Alexander (1 ♀); Maydena, 6.iv.1961 (1 ♂). *Scoricornis humilis*, Maydena, 15.vii.1962, B. Maclean (1 ♂).

In both the female and nymphal specimens, palpal article I possesses a conspicuous, internal anterior horn-like process, and as there is no mesodorsal spur on this article, they have been placed in the *auritulus* group (Arthur 1960). The female has been compared with *a. zealandicus* Dumbleton by Dumbleton (personal communication) who considers it to differ in the longer, narrower, more strongly retrograde auriculae, in the shape of the porose areas, in the form of the coxal spurs and in the shape of the concavity between the spurs. The coxal characters are reminiscent of Arthur's (1960) figure of the South American form of this species. This female could be another subspecies of *auritulus*.

This is the first record of a member of the *auritulus* group in Australia.

I. pterodromae Arthur

In addition to the record from *Diomedea exulans*, De Witt I. (Roberts 1960), this species is now known from *Puffinus tenuirostris*, Bruni I., 1.iv.1962, T. O. Wolfe (2 ♀) and Fisher I., Bass Strait, Mar. 1963, T.O.W. (2 ♂).

I. uriae White

The only record of this species is "Tasmanian penguin," King I., Bass Strait (Roberts 1960).

I. kohlsi Arthur

Previously known from *Eudyptula minor*, Kingston Beach and North Bruni I. (Roberts 1960), *kohlsi* is now recorded also from this host, Little Green I., Furneaux Group, Bass Strait, Jan. 1952, J. H. Calaby (8 o).

I. ornithoryuchi Lucas

Roberts (1960) noted this species from *Ornithorhynchus anatinus*, Bothwell, and Mt. Wellington, and from "blue-tongue lizard," Hobart. New records from *O. anatinus* include Westbury, 9.iii.1961, B. C. Mollison (1 o), and Maydena, 9.v.1961, T. Anderson (5 ♀, 3 o). The record from "blue tongue lizard" is probably erroneous, as this tick appears specific to the platypus.

I. tasmani Neumann

Hosts and localities previously noted (Roberts 1960) include *Sarcophilus harrisi*, Hobart, "wombat," Gretna, and "tiger cat," Arthur R.

Material since examined indicated that this species is extremely widespread and is undoubtedly the most common Tasmanian tick, occurring on a wide variety of hosts. These include :

Sarcophilus harrisi: Maydena, 5.i.1959, B. C. Mollison (2 ♀); Maydena, 5.ii.1960, B.C.M. (28 ♀); Maydena, 11.vi.1960, B.C.M. (2 ♀); Maydena, 2.ii.1962, B.C.M. (10 ♀); Hilltop, 24.ii.1960, B.C.M. (2 ♀); Rocherlea, 11.ii.1962, R. H. Green (4 ♀); Florentine Valley, 25.ix.1963, T. O. Wolfe (5 ♀, 4 o, 3 larvae). *Dasyurus quoll*: Tim Shea, 2.ii.1960, B.C.M. (1 ♀, 3 o); Mt. Wellington, 22.ii.1961, B.C.M. (2 o). *Trichosurus vulpecula fuliginosus*: Smithson, 30.xii.1961, N. Marsh, (1 ♀); Mt. Styx, 19.ii.1957, B.C.M. (1 o); Kelso, 19.ii.1957, B.C.M. (3 ♂); Maydena, 2.ii.1960, B.C.M. (1 o); Maydena, 21.i.1960, B.C.M. (1 o); Hythe, 13.i.1962 (1 ♀, 1 o). *Vombatus ursinus*: Mt. Field National Park, 2.xii.1959, T. Anderson (2 ♀); Kelso, 5.ii.1960, B.C.M. (5 ♀); Green's Beach, 20.vii.1960, B.C.M. (5 ♀); Green's Beach, 20.viii.1961, R.H.G. (1 ♀). *Protemnodon rufogrisea*: Mersey R., near Woogera, 9.i.1957, G. B. Sharman (3 ♀); Maydena, 6.i.1959, B.C.M. (3 ♀); Maydena, 29.xi.1960, B.C.M. (1 ♀); Maydena, 15.xi.1961, B.C.M. (2 ♀). *Potorous tridactylus*: Maydena, 7.i.1960, T.A. (1 o); Green's Beach, 2.iii.1961, B.C.M. (1 ♀, 5 o, 7 larvae); Orford, 25.xii.1961, B.C.M. (3 o). *Thylogale bilardieri*: Maydena, Feb. 1959, B.C.M. (3 ♀); Maydena, 31.i.1960, T.A. (7 ♀); Maydena, 5.ix.1961, B.C.M. (1 ♀, 1 o); Maydena, 23.xi.1961, B.C.M. (2 ♀, 1 o). *Peromyscus gunnii*: Maydena, 29.xi.1961, J. H. Callaby (5 ♀, 5 o, 8 larvae); Maydena, 29.xi.1960 B.C.M. (4 ♀). *Isodon obesulus*: Dunorlan, 9.i.1959, G.B.S. (3 ♀); Maydena, 17.xii.1960, T.A. (3 o, 3 larvae); Cascades, South Hobart, 5.vii.1962, B.C.M. & T.A. (2 o). *Pseudocheirus*

convolutor: 19.x.1960, B.C.M. (1 o); Saint Valentine's Peak, 9.vii.1962, T.A. (3 o). *P. laiginosus*: Delamere, 2.vii.1959, G.B.S. (1 o, 3 larvae). *Bettonia canicollis*: Green's Beach, 4.ix.1962, R.H.G. (4 o). *Petaurus breviceps*: Westbury, 8.viii.1960, R.H.G. (2 o). *Tachyglossus setosus*: Maydena, 10.ii.1959, B.C.M. (2 ♀); Antill Ponds, 17.iii.1960, R.H.G. (2 ♀); Scotsville, 16.iv.1962, R.H.G. (2 ♀). *Rattus norvegicus*: Hobart, 19.x.1961, B.C.M. (2 larvae); Woolbridge, 19.i.1961, B.C.M. (13 larvae). *R. rattus*: Maydena, 12.xii.1959, B.C.M. 2 o, 3 larvae); Maria I., 25.iv.1962, R.H.G. (3 o). *E. lutreolus*: Yolla, 16.ii.1962, B.C.M. (3 larvae). *Hydromys chrysogaster*: Sandy Bay, Hobart, 12.iii.1962, R.H.G. (3 o). *Pseudomys higginsi*: Waratah, 27.vi.1963, R.H.G. (3 o). *Homo sapiens*: Green's Beach, 14.x.1961 (1 o attached); Notley Fern Gorge, West Tamar, 24.xi.1962, R.H.G. (1 ♀ attached); Maydena, 6.iii.1961 (1 o crawling).

I. feicalis Warburton & Nuttall

Previously known from "tiger cat," Arthur R., and *Antechinus* sp. McIntyre R. (Roberts 1960), this species is now recorded also from *Dasyurus quoll*, Georgetown, 12.iii.1960, R. H. Green (3 o), and *Sarcophilus harrisi*, Maydena, 2.ii.1962, B. C. Mollison (1 ♀).

I. antechini Roberts

This species is recorded from Tasmania for the first time. Determination was based on the following material: *Dasyurus quoll*: Maydena, 9.ii.1961, B. C. Mollison (1 o); Icena Estate, 13/14.v.1961, R. H. Green (1 o). *Antechinus minimus*: Maatsuyker I., Aug. 1951 (8 larvae). *A swainsonii*, Maatsuyker I., Aug. 1951 (4 o).

I. australiensis Neumann

Previously known only from Western Australia, this species is represented by three lots of specimens from *Potorous tridactylus*, namely, Beaconsfield, 4.xi.1960, R. H. Green (2 o); Myrtle Bank, 16.viii.1961, R.H.G. (8 o, 4 larvae); Kelso, 6.ix.1961, R.H.G. (1 o).

The nymph of *australiensis* was described by Roberts (1960). The Tasmanian material agrees with this description except for slightly larger scuta.

I. cornuatus Roberts

This species was previously recorded from unknown hosts, Cox's Bight and Gordon R. (Roberts 1960). Specimens since determined from adults include :

Vombatus ursinus: Mount Field National Park, 11.xii.1959, T. Anderson (2 ♀); Mundunna, 25.ii.1961, B. C. Mollison (1 ♀); Kelso, 5.ii.1960, B.C.M. (8 ♀).

The immature forms of this species have not been described, and up to the present all immature material received has not been accompanied by any adults. Determination of the following immature specimens as *cornuatus* is, therefore, only tentative :

Isoodon obesulus: Eagle Hawk, 9.ix.1961, T. Anderson (1 o); Deviot, 28.i.1962, R. H. Green (1 o); Green's Beach, 27.i.1961, B. C. Mollison (5 o, 1 larvae); Burnie, 27.i.1961, B.C.M. (1 o); Green's Beach, 26.ii.1961, B.C.M. (8 o); Green's Beach, 16.ii.1961, B.C.M. (3 o, numerous larvae); Green's Beach, 9.iv.1961, B.C.M. (4 o). *Thylogale billiardieri*: Kelso, 17.ii.1960, R.H.G. (1 o, 1 larva). *Trichosurus vulpecula fuliginosus*: Kelso, 16.ii.1960, B.C.M. (15 larvae). *Bettongia cuniculus*: Green's Beach, 12.vi.1961, R.H.G. (2 o). *Perameles gunnii*: Green's Beach, 11.v.1961, B.C.M. (22 o). *Rattus rattus*: Green's Beach, 27.iii.1961, B.C.M. (20 larvae). *R. lutreolus*: Kelso, 19.ii.1960, B.C.M. (8 larvae). *Mus musculus*: Flowery Gully, 3.iv.1963, R.H.G. (1 larva). *Strepera fuliginosa*: Maydena, 6.iv.1961, T. O. Wolfe (1 o). *Cracticus torquatus*: Kelso, 19.ii.1961, B.C.M. (1 larva). *Colhiricincla harmonica*: Green's Beach, 20.viii.1961, R.H.G. (1 o). *Scricornis humilis*: Green's Beach, 24.ii.1961, B.C.M. (1 larva).

I. hirsti Hassall

Roberts (1960) recorded this tick from "kangaroo," King I., and from an unknown host, Mt. Wellington. It has since been taken on *Trichosurus vulpecula fuliginosus*, Smithton, 30.ii.1961, W. Marsh (1 ♀).

I. trichosuri Roberts

This tick hitherto recorded only from Cheltenham, N.S.W., has now been determined in Tasmania in the following material:

Trichosurus vulpecula fuliginosus, Hythe, 30.i.1962, B. C. Mollison (1 ♀). *Bettongia cuniculatus*, Green's Beach, 12.vi.1960, R. H. Green (2 o). *Rattus lutreolus*, Flowery Gully, 3.iv.1963, R.H.G. (6 larvae). *R. rattus*, Deviot, 24.xi.1963, R.H.G. (3 larvae). *Scricornis humilis*, Hunting Ground, 28.xi.1963, T. O. Wolfe (1 o, 1 larva).

Genus *Amblyomma* Koch

Records of the occurrence of species of *Amblyomma* remain restricted to *Amb. limbatum* and *Amb. postoculatum* described by Neumann (1899) from King I., Bass Strait (Roberts 1964).

Genus *Aponomma* Neumann

Roberts (1953) referred to only one record of this genus, namely, *trachysauri* on *Trachysaurus rugosus*. A later paper (Roberts 1964) increased the number of species to three, namely *hydrosauri*, *auruginans* and *concolor*. In this paper it was shown that the species of inornate *Aponomma* from reptiles previously called *trachysauri* Lucas should be referred to the name *hydrosauri* Denny, and that from the echidna, *Tachyglossus* spp., previously determined as *hydrosauri*, should be referred to *concolor* Neumann.

Ap. hydrosauri Denny

Material determined under this name comprised: *Chelodina longicollis* (introduced): Green's R. H. Green (2 o). *Tiliqua nigrohutea*: West Tamar, 27.x.1959, R.H.G. (2 ♂, 5 o); Green's Beach, 16.ii.1961, B. C. Mollison (4 ♂, 2 ♀, 8 o); Kelso, 19.ii.1961, B.C.M. (4 ♂, 3 ♀, 4 o); Green's Beach, 22.vii.1961, R.H.G. (2 ♀); Sandford, 9.ix.1962, B.C.M. (6 ♂, 1 o). *T. scincoides*, Launceston, 17-20.xi.1960, B.C.M. (2 ♂, 1 ♀, 1 o). *Trachysaurus rugosus*, Launceston, 22.ii.1960 (2 ♂). *Amphibolurus diemensis*, Launceston, 15.x.1963, R.H.G. (20 larvae). *Denisonia superba*, Kelso, 16.ii.1961, R.H.G. (3 ♂, 4 o); Green's Beach, 24.iv.1961, R.H.G. (3 ♀, 2 o). *Notechis scutatus scutatus*, Lower Longley, 15.v.1962, B.C.M. (1 ♀).

Ap. concolor Neumann

This species was represented by five lots, all from *Tachyglossus sctosus*. Details are: Deloraine, 21.i.1959 (3 ♀); Wynyard, 8.xii.1960, R. H. Green (2 ♂, 3 ♀, 1 o); Green's Beach, 7.xi.1961, R.H.G. (7 o, 4 larvae); Kelso, 17.ii.1961, B. C. Mollison (1 o, 6 larvae).

Ap. auruginans Schulze

This material includes: *Vombatus ursinus*, Tarraleah, 12.i.1949 (1 ♂, 2 ♀); Deloraine, 4.xii.1958 (2 ♀, 1 o); Gretna, 2.iii.1960, J. Rolley (1 ♀). Wandering in cave, Flinders I., Mar. 1960, J. Thomson (1 ♂, 1 ♀).

CLASSIFIED HOST PARASITE LIST

Classification and Name of Host	Parasite	Classification and Name of Host	Parasite
Monotremata		Vombatidae	
Ornithorhynchidae		<i>Vombatus ursinus</i>	<i>I. tasmani</i>
<i>Ornithorhynchus anatinus</i> (Shaw, 1799) platypus	<i>I. ornithorhynchi</i>	(Shaw, 1800), Tasmanian wombat	<i>I. cornuatus</i> <i>Ap. auruginus</i>
Tachyglossidae		Macropodidae	
<i>Tachyglossus setosus</i> (Geoffroy, 1803), Tasmanian echidna	<i>I. tasmani</i> <i>Ap. concolor</i>	<i>Bettongia cuiculus</i> (Ogilby, 1838), Tasmanian rat-kangaroo	<i>I. tasmani</i> <i>I. trichosuri</i>
Marsupialia		<i>Potorous tridactylus</i> (Kerr, 1792), long-nosed rat-kangaroo	<i>I. tasmani</i> <i>I. australiensis</i> <i>I. ? cornuatus</i>
Dasyuridae		<i>Thylogale billardieri</i> (Desmarest, 1822), Tasmanian pademelon	<i>I. tasmani</i> <i>I. ? cornuatus</i>
<i>Antechinus swainsonii</i> (Waterhouse, 1840), dusky marsupial mouse	<i>I. antechini</i>	<i>Protemnodon rufogrisea</i> (Desmarest, 1817), brush wallaby	<i>I. tasmani</i>
<i>A. minimus</i> (Geoffroy, 1803), little Tasmanian marsupial mouse	<i>I. antechini</i>	Kangaroo	<i>I. hirsti</i>
<i>Antechinus</i> sp.	<i>I. feccialis</i>	Rodentia	
<i>Dasyurus quoll</i> (Zimmermann, 1777), eastern native cat	<i>I. tasmani</i> <i>I. feccialis</i> <i>I. antechini</i>	Muridae	
Tiger cat	<i>I. tasmani</i> <i>I. feccialis</i>	<i>Rattus rattus</i> (Linnaeus, 1758), black rat	<i>I. tasmani</i> <i>I. ? cornuatus</i>
<i>Sarcophilus harrisi</i> (Boitard, 1841), Tasmanian devil	<i>I. tasmani</i> <i>I. feccialis</i>	<i>R. norvegicus</i> (Berkenhout, 1769), brown rat	<i>I. tasmani</i> <i>I. ? cornuatus</i>
Peramelidae		<i>R. lutreolus</i> (Gray, 1841), eastern swamp rat	<i>I. tasmani</i> <i>I. ? cornuatus</i>
<i>Isoodon obesulus</i> (Shaw, 1797), short-nosed bandicoot	<i>I. tasmani</i> <i>I. ? cornuatus</i>	<i>Hydromys chrysogaster</i> Geoffroy, 1844, eastern water rat	<i>I. tasmani</i>
<i>Perameles gunnii</i> (Gray, 1838), Tasmanian barred bandicoot	<i>I. tasmani</i> <i>I. ? cornuatus</i>	<i>Pseudomys higginsi</i> (Trouessart, 1899), native mouse	<i>I. tasmani</i>
Phalangeridae		<i>Mus musculus</i> Linnaeus, 1758, house mouse	<i>I. ? cornuatus</i>
<i>Petaurus breviceps</i> Waterhouse, 1839, sugar glider possum	<i>I. tasmani</i>	Chiroptera	
<i>Pseudocheirus convolutor</i> (Oken, 1816), Tasmanian ring-tail possum	<i>I. tasmani</i>	Vespertilionidae	
<i>P. laniginosus</i> (Gould, 1858), common ring-tail possum	<i>I. tasmani</i>	<i>Pipistrella tasmaniansis</i> (Gould, 1858), false pipistrel	<i>Argas (Carios) sp.</i>
<i>Trichosurus vulpecula</i> <i>fuliginosus</i> (Ogilby, 1831), Tasmanian brush-tail possum	<i>I. tasmani</i> <i>I. trichosuri</i> <i>I. hirsti</i> <i>I. ? cornuatus</i>	Primates	
		Hominidae	
		<i>Homo sapiens</i> Linnaeus, 1758, man	<i>I. tasmani</i>

Classification and Name of Host	Parasite	Classification and Name of Host	Parasite
Squamata		Procellariidae	
Scincidae		<i>Puffinus tenuirostris</i> (Temminck, 1835) Tasmanian mutton bird	
<i>Trachysaurus rugosus</i> Gray, 1827, stump-tail lizard	<i>Ap. hydrosauri</i>		<i>I. pterodromae</i>
<i>Tiliqua nigrolutea</i> (Peters, 1863), southern blue-tongued lizard	<i>Ap. hydrosauri</i>	Passeriformes	
<i>T. scincoides</i> (Shaw, 1790), blue-tongue lizard	<i>Ap. hydrosauri</i>	Maluridae	
<i>Amphibolurus diemensis</i> (Gray, 1841), mountain dragon	<i>Ap. hydrosauri</i>	<i>Sericornis humilis</i> Gould, 1838, brown scrub-wren	
Blue-tongued lizard	? <i>I. ornithorhynchi</i>	Cracticidae	
Elapidae		<i>Strepera fuliginosa</i> (Gould, 1837), black currawong	
<i>Denisonia superba</i> (Gunther, 1858), copper-head snake	<i>Ap. hydrosauri</i>	<i>Cracticus torquatus</i> (Latham, 1801), grey butcher bird	
<i>Notechis scutatus scutatus</i> (Peters, 1861), tiger snake	<i>Ap. hydrosauri</i>	Pelecaniformes	
Testudines		Sulidae	
Chelidae		<i>Sula bassana serrator</i> Gray, 1843, Australian gannet	
<i>Chelodina longicollis</i> (Shaw, 1802), long-necked tortoise (introduced)	<i>Ap. hydrosauri</i>	Charadriiformes	
Sphenisciformes		Laridae	
Spheniscidae		<i>Larus novae-hollandiae</i> Stephens, 1826 silver gull	
<i>Eudyptula minor</i> (Foster, 1781), little penguin	<i>I. eudyptidis</i> <i>I. uriae</i> <i>I. kohlsi</i>	Strigiformes	
Procellariiformes		Strigidae	
Diomedidae		<i>Tyto novaehollandiae</i> <i>castanops</i> (Gould, 1837), Tasmanian masked owl	
<i>Diomedea exulans</i> Linnaeus, 1758, wandering albatross	<i>I. pterodromae</i>	Host not specified	
		<i>Amb. limbatum</i> <i>Amb. postoculatum</i>	

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